those estimates is detailed in Aars et al. (2006, pp. 34–35). In some instances a subjective assessment of trend has been provided in the absence of either a monitoring program or estimates of population size developed for more than one point in time. This status and trend analysis only reflects information about the past and present polar bear populations. Later in this final rule a discussion will be presented about the scientific information on threats that will affect the species within the foreseeable future. The Act establishes a five-factor analysis for using this information in making listing decisions.

Populations are discussed in a counterclockwise order from Figure 1, beginning with East Greenland. There is no population size estimate for the East Greenland polar bear population because no population surveys have been conducted there. Thus, the status and trend of this population have not been determined. The Barents Sea population was estimated to comprise 3,000 animals based on the only population survey conducted in 2004. Because only one abundance estimate is available, the status and trend of this population cannot yet be determined. There is no population size estimate for the Kara Sea population because population surveys have not been conducted; thus status and trend of this population cannot yet be determined. The Laptev Sea population was estimated to comprise 800 to 1,200 animals, on the basis of an extrapolation of historical aerial den survey data (1993). Status and trend cannot yet be determined for this population.

The Chukchi Sea population is estimated to comprise 2,000 animals, based on extrapolation of aerial den surveys (2002). Status and trend cannot yet be determined for this population. The Southern Beaufort Sea population is comprised of 1,500 animals, based on a recent population inventory (2006). The predicted trend is declining (Aars et al. 2006, p.33), and the status is designated as reduced. The Northern Beaufort Sea population was estimated to number 1,200 animals (1986). The trend is designated as stable, and status is believed to be not reduced. Stirling et al. (2007, pp. 12–14) estimated long-term trends in population size for the Northern Beaufort Sea population. The model-averaged estimate of population size from 2004 to 2006 was 980 bears, and did not differ in a statistically significantly way from estimates for the periods of 1972 to 1975 (745 bears) and 1985 to 1987 (867 bears), and thus the trend is stable. Stirling et al. (2007, p. 13) indicated that, based on a number of indications and separate annual abundance estimates for the study period, the population estimate may be slightly biased low (i.e., might be an underestimate) due to sampling issues.

The Viscount Melville Sound population was estimated to number 215 animals (1992). The observed or predicted trend based on management action is listed as increasing (Aars et al. 2006, p. 33), although the status is designated as severely reduced from prior excessive harvest. The Norwegian Bay population estimate was 190 animals (1998); the trend, based on computer simulations, is noted as declining, while the status is listed as not reduced. The Lancaster Sound population estimate was 2,541 animals (1998); the trend is thought to be stable, and status is not reduced. The M'Clintock Channel population is estimated at 284 animals (2000); the observed or predicted trend based on management actions is listed as increasing although the status is severely reduced from excessive harvest. The Gulf of Boothia population estimate is 1,523 animals (2000); the trend is thought to be stable, and status is designated as not reduced. The Foxe Basin population was estimated to number 2,197 animals in 1994; the population trend is thought to be stable, and the status is not reduced. The Western Hudson Bay population estimate is 935 animals (2004); the trend is declining, and the status is reduced. The Southern Hudson Bay population was estimated to be 1,000 animals in 1988 (Aars et al. 2006, p. 35); the trend is thought to be stable, and status is not reduced. In a more recent analysis, Obbard et al. (2007) applied open population capture-recapture models to data collected from 1984–86 and 1999–2005 to estimate population size, trend, and survival for the Southern Hudson Bay population. Their results indicate that the size of the Southern Hudson Bay population appears to be unchanged from the mid-1980s. From 1984–1986, the population was estimated at 641 bears; from 2003–2005, the population was estimated at 681 bears. Thus, the trend for this population is stable. The Kane Basin population was estimated to be comprised of 164 animals (1998); its trend is declining, and status is reduced. The Baffin Bay population was estimated to be 2,074 animals (1998); the trend is declining, and status is reduced. The Davis Strait population was estimated to number 1,650 animals based on traditional ecological knowledge (TEK) (2004); data were unavailable to assess trends or status. Preliminary information from the second of a 3-year population assessment estimates the population number to be 2,375 bears (Peacock et al. 2007, p. 7). The Arctic Basin population estimate, trend, and status are unknown (Aars et al. 2006, p. 35).

On the basis of information presented above, two polar bear populations are designated as increasing (Viscount Melville Sound and M'Clintock Channel-both were severely reduced in the past and are recovering under conservative harvest limits); six populations are stable (Northern Beaufort Sea, Southern Hudson Bay, Davis Strait, Lancaster Sound, Gulf of Bothia, Foxe Basin); five populations are declining (Southern Beaufort Sea, Norwegian Bay, Western Hudson Bay, Kane Basin, Baffin Bay); and six populations are designated as data deficient (Barents Sea, Kara Sea, Laptev Sea, Chukchi Sea, Arctic Basin, East Greenland) with no estimate of trend. The two populations with the most extensive time series of data, Western Hudson Bay and Southern Beaufort Sea, are both considered to be declining.

As previously noted, scientific information assessing this species in the foreseeable future is provided later in this final rule.

Polar Bear Ecoregions

Amstrup et al. (2007, pp. 6–8) grouped the 19 IUCN-recognized polar bear populations (Aars et al. 2006, p. 33) into four physiographically different functional groups or ''ecoregions'' (Figure 2) in order to forecast future polar bear population status on the basis of current knowledge of polar bear populations, their relationships to sea ice habitat, and predicted changes in sea ice and other environmental variables. Amstrup et al. (2007, p. 7) defined the ecoregions ''on the basis of observed temporal and spatial patterns of ice formation and ablation (melting or evaporation), observations of how polar bears respond to those patterns, and how general circulation models (GCMs) forecast future ice patterns.''

The *Seasonal Ice Ecoregion* includes the Western and Southern Hudson Bay populations, as well as the Foxe Basin, Baffin Bay, and Davis Strait populations. These 5 IUCN-recognized populations are thought to include a total of about 7,200 polar bears (Aars et al. 2006, p. 34–35). The 5 populations experience sea ice that melts entirely in summer, and bears spend extended periods of time on shore.